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Pure copper and stainless steel additive manufacturing of an IH-type linac structure

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Additive manufacturing ("AM") has become a powerful tool for rapid prototyping and manufacturing of complex geometries. A 433 MHz IH-DTL cavity has been constructed to act as a proof of concept for direct additive manufacturing of linac components. In this case, the internal drift tube structure has been produced from 1.4404 stainless steel, as well as pure copper using AM. The Prototype cavity, as well as stainless steel AM parts have been copper plated. We present results from low level rf measurements of the cavity with and without copper plating, as well as the status of preparations for high power rf tests with a 30 kW pulsed power amplifier.

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